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TPI-T200XC1
Serial No. 09/756,092Claim 271 (new):

The method of claim 200, wherein the structural property screened is resistance to chemical reactions induced by heat.

Claim 272 (new):

The method of claim 200, wherein the structural property screened is resistance to chemical reactions induced by ultraviolet light.

Claim 273 (new):

The method of claim 200, wherein the structural property screened is resistance to chemical reactions induced by moisture.

Claim 274 (new):

The method of claim 200, wherein the structural property screened is resistance to chemical reactions between components.

Claim 275 (new):

The method of claim 200, wherein the structural property screened is resistance to chemical reactions induced by oxygen.

Claim 276 (new):

The method of claim 180, wherein the processed samples are analyzed by machine vision technology.

Claim 277 (new):

The method of claim 180, wherein the processed samples are analyzed by video-optical microscopy.

Claim 278 (new):

The method of claim 180, wherein the processed samples are analyzed by image analysis.

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The method of claim 189, wherein the processed samples are analyzed by polarized light analysis.

Claim 280 (new):

The method of claim 180, wherein the processed samples are analyzed by near field scanning optical microscopy.

Claim 281 (new):

The method of claim 180, wherein the processed samples are analyzed by far field scanning optical microscopy.

Claim 282 (new):

The method of claim 180, wherein the processed samples are analyzed by atomic-force microscopy.

Claim 283 (new):

The method of claim 180, wherein the processed samples are analyzed by micro-thermal analysis.

Claim 284 (new):

The method of claim 180, comprising analyzing the crystalline salt form by infrared spectroscopy.

Claim 285 (new):

The method of claim 180, comprising analyzing the crystalline salt form by near infrared spectroscopy.

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The method of claim 180, comprising analyzing the crystalline salt form by Raman spectroscopy.

Claim 287 (new):

The method of claim 180, comprising analyzing the crystalline salt form by NMR.

Claim 288 (new):

The method of claim 180, comprising analyzing the crystalline salt form by x-ray diffraction.

Claim 289 (new):

The method of claim 180, comprising analyzing the crystalline salt form by neutron diffraction.

Claim 290 (new):

The method of claim 180, comprising analyzing the crystalline salt form by powder x-ray diffraction.

Claim 291 (new):

The method of claim 180, comprising analyzing the crystalline salt form by light microscopy.

Claim 292 (new):

The method of claim 180, comprising analyzing the crystalline salt form by second harmonic generation.

Claim 293 (new):

The method of claim 180, comprising analyzing the crystalline salt form by electron microscopy.

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The method of claim 180, wherein the processed samples are analyzed by an in vitro assay.

Claim 295 (new):

The method of claim 180, wherein said crystalline salt form is a solvate.

Claim 296 (new):

The method of claim 180, wherein said crystalline salt form is a desolvated solvate.

Claim 297 (new):

The method of claim 180, wherein said crystalline salt form is, a clathrate.

Claim 298 (new):

The method of claim 180, wherein said crystalline salt form is an inclusion.

Claim 299 (new):

The method of claim 180, wherein said system comprises a sample incubation and sample detection module.

Claim 300 (new):

The method of claim 180, wherein data collected is used to identify occurrence of conditions that define occurrence domains that will give rise to a specific crystal form.

Claim 301 (new):

The method of claim 189, wherein said visual analysis comprises machine vision technology.

Claim 302 (new):

A method of identifying crystalline salts of a small molecule pharmaceutical using a system comprising a series of integrated modules, or workstations, comprising:

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- (a) preparing and identifying an array of at least 96 samples in tubes and support plates or in sample well plates and dispensing components into sample tubes or sample wells with a sample generation module, wherein each sample contains less than about 100 milligrams of said small molecule pharmaceutical, one or more of a solvent, and each sample differs with respect to at least one of:
- (i) the amount or concentration of the small molecule pharmaceutical;
 - (ii) an amount, concentration or identity of said one or more of a solvent; or
 - (iii) an amount, concentration or identity of one or more of an acid or base;
- (b) sealing said samples;
- (c) processing said samples comprising evaporating solvent from said samples wherein at least one of the processed samples comprises a crystalline salt form of the small molecule pharmaceutical;
- (d) analyzing the processed array of samples comprising detecting crystalline solid formation in said samples using visual analysis, measuring a property for each crystalline solid and using the results of said measuring to group similar crystalline salt polymorphs, hydrates and solvates that belong to the same crystal family using informatics.

Claim 303 (new):

A method of identifying crystalline salts of a small molecule pharmaceutical using a system comprising a series of integrated modules, or workstations, comprising:

- (a) preparing and identifying an array of at least 96 samples in tubes and support plates or in sample well plates and dispensing components into sample tubes or sample wells with a sample generation module, wherein each sample contains less than about 100 milligrams of said small molecule pharmaceutical, and each sample differs with respect to at least one of:
- (i) the amount or concentration of the small molecule pharmaceutical;
 - (ii) an identity of one or more of a solvent, acid or base; or
 - (iii) an amount or concentration of one or more of a solvent, acid or base;
- (b) sealing said samples;

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- (c) processing said samples comprising adding an antisolvent to said samples wherein at least one of the processed samples comprises a crystalline salt form of the small molecule pharmaceutical;
- (d) analyzing the processed array of samples comprising detecting crystalline solid formation in said samples using visual analysis, measuring a property for each crystalline solid and using the results of said measuring to group similar crystalline salt polymorphs, hydrates and solvates that belong to the same crystal family using informatics.

Claim 304 (new):

A method of identifying crystalline salts of a small molecule pharmaceutical comprising:

- (a) preparing and identifying an array of at least 96 samples in tubes and support plates or in sample well plates and dispensing: i) said small molecule pharmaceutical; a salt forming component; and additional components into sample tubes or sample wells with a sample generation module, wherein said array comprises at least 1 group of at least 24 samples, each sample contains less than about 100 milligrams of said small molecule pharmaceutical, and each sample differs with respect to at least one of:
 - (i) the amount or concentration of the small molecule pharmaceutical;
 - (ii) an identity of one or more of a solvent, acid or base; or
 - (iii) an amount or concentration of one or more of a solvent, acid or base;
- (b) sealing said samples;
- (c) processing said samples comprising heating said samples in a sample incubation module to a temperature (T1), analyzing said samples for the presence of undissolved solids using visual analysis, cooling said samples to a final temperature (T2), wherein at least one of the processed samples comprises a crystalline salt form of the small molecule pharmaceutical; and
- (d) analyzing the processed array of samples comprising detecting crystalline solid formation in said samples using visual analysis, measuring a property for each crystalline solid and using the results of said measuring to group similar crystalline salt polymorphs, hydrates and solvates that belong to the same crystal family using informatics.

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